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CHIMERIC INFECTIOUS DNA CLONES, CHIMERIC
PORCINE CIRCOVIRUSES AND USES THEREOF

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ABSTRACT OF THE DISCLOSURE

The present invention relates to infectious DNA clones, infectious chimeric DNA clones of porcine circovirus (PCV), vaccines and means of protecting pigs against viral infection or postweaning multisystemic wasting syndrome (PMWS) caused by PCV2. The new chimeric infectious DNA clone and its derived, avirulent chimeric virus are constructed from the nonpathogenic PCV1 in which the immunogenic ORF gene of the pathogenic PCV2 replaces a gene of the nonpathogenic PCV1, preferably in the same position. The chimeric virus advantageously retains the nonpathogenic phenotype of PCV1 but elicits specific immune responses against the pathogenic PCV2. The invention further embraces the immunogenic polypeptide expression products. In addition, the invention encompasses two mutations in the PCV2 immunogenic capsid gene and protein, and the introduction of the ORF2 mutations in the chimeric clones.